BALTIMORE/WASHINGTON INTERNATIONAL Thurgood Marshall AIRPORT

Quarterly Noise Report
First Quarter 2020

MARYLAND DEPARTMENT OF TRANSPORTATION

MARYLAND AVIATION ADMINISTRATION

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Overview

This report provides a review of the aviation noise program for the 1st Quarter of 2020 (January 1 to March 31). Included in this report is information on jet aircraft operations, observance rates for noise abatement procedures, complaints received about aircraft noise, and community outreach efforts by the Maryland Department of Transportation Maryland Aviation Administration (MDOT MAA). The table below displays various measurements for 2020 in comparison to the 1st Quarter of 2019.

Measurement	1st Quarter (2019)	1st Quarter (2020)
Average Daily Jet Operations	592	591
Average Daily Night-time Operations	96	93
Complaints to Noise Office	111,888	131,037
West Flow Operations	67%	73%

Definitions

Maryland Department of Transportation Maryland Aviation Adminstration (MDOT MAA): Operator of Baltimore/Washington International Thurgood Marshall Airport (BWI Marshall Airport).

Decibel (dBA): A unit of measurement of sound pressure adjusted for the human ear's response to particular frequencies.

Day-Night Average Sound Level (DNL or Ldn): A descriptor of 24-hour noise (midnight to midnight) that adds a ten-decibel (dB) nighttime penalty to noise events which occur between the hours of 10 p.m. and 7 a.m to account for the intrusive nature of noise at night. This metric is required by FAA and COMAR.

Airport Noise Zone (ANZ): An area of land surrounding the airport within which noise levels are equal to or greater than DNL 65 dBA.

Code of Maryland Regulations (COMAR): Requires MDOT MAA to control development in areas where noise levels are DNL 65 dBA or more.

MDOT MAA Noise Section Mission Statement

The Noise Section of the Office of Environmental Services is committed to monitoring aircraft operations and airport related noise levels in the communities surrounding BWI Marshall and Martin State Airports, and is dedicated to helping stakeholders understand the facts, science, and regulations associated with airport noise in a transparent, clear and accessible way to those we serve.

Website: https://www.maacommunityrelations.com

Noise complaints may be submitted at this site, via phone at (410-859-7021), via email to (maanoiseabatement@bwiairport.com), via Airnoise.io, via WebTrak interface, or via mail.

Frequently Asked Questions

MDOT MAA has developed a list of frequently asked questions regarding aircraft noise topics. The full list can be accessed at: https://maacommunityrelations.com/content/contactus/faqs.php

Can MDOT MAA change flight paths?

No. The FAA controls and regulates the airspace. Any change in departure or arrival flight paths must be approved and implemented by the FAA.

Who instructs aircraft where to fly?

The FAA is the sole organization in the United States responsible for the movement of aircraft both on the ground and in the air.

Will filing a complaint bring about an immediate change to flight paths?

Filing a complaint will not bring about an individual's desired change, rather it provides a means for the Airport to gather information, report, and disseminate the information to the FAA, airlines, public, and local representatives.

Why was I awoken last night by aircraft noise?

BWI Marshall Airport operates 24 hours per day, 365 days per year. There is no nighttime curfew at the airport.

Can MDOT MAA restrict where aircraft fly and when?

No.

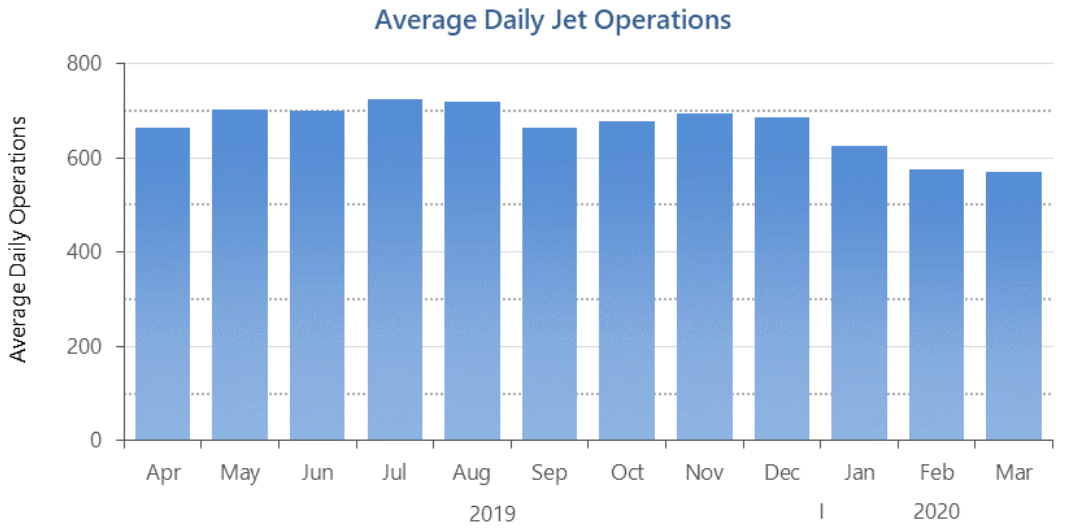
Airport Operations

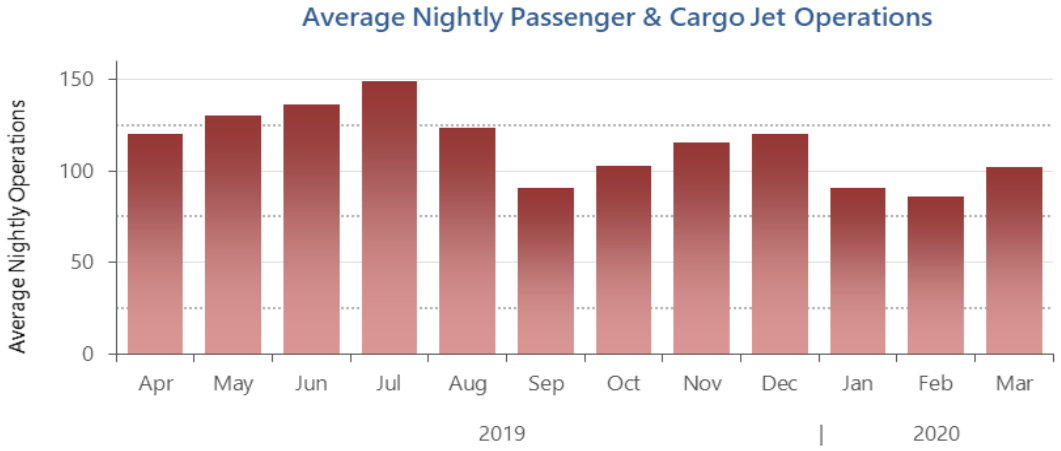
This section presents information on the level of operational activity at BWI Marshall Airport; including air traffic levels by jet aircraft, runway use, and flight corridors.

Jet Operations and Nighttime Activity

The first figure shows the average number of daily jet flights at BWI Marshall, including arrivals and departures by air carrier, business jet, and cargo jet aircraft. The figure also presents data for the preceding nine months, for a twelve-month total. The average daily number of jet operations during the 1st Quarter of 2020 was 591.

The next figure presents nighttime air carrier, business jets and cargo jet operations. At BWI Marshall Airport, a nighttime operation is defined as an arrival flight or departure flight that occurs between the hours of 10 p.m. and 7 a.m. The average number of nighttime jet operations was approximately 93 per night during the 1st Quarter of 2020.





1st Quarter 2020 – Most Frequent Aircraft Operations at BWI Marshall

The table to the right represents the top ten aircraft by type and operations count at BWI Marshall for the 1st Quarter of 2020.

First Quarter 2020 Top Ten Aircraft Operations	
Aircraft Type	**Operation Count**
Boeing 737-700	**23,096**
Boeing 737-800	**10,129**
Airbus A320	**3,399**
Cessna 208	**1,927**
Boeing 737-900	**1,575**
Airbus A321	**1,520**
Bombardier CRJ-200	**1,315**
Airbus A319	**1,219**
Boeing 767-200	**1,037**
Boeing 767-300	**977**

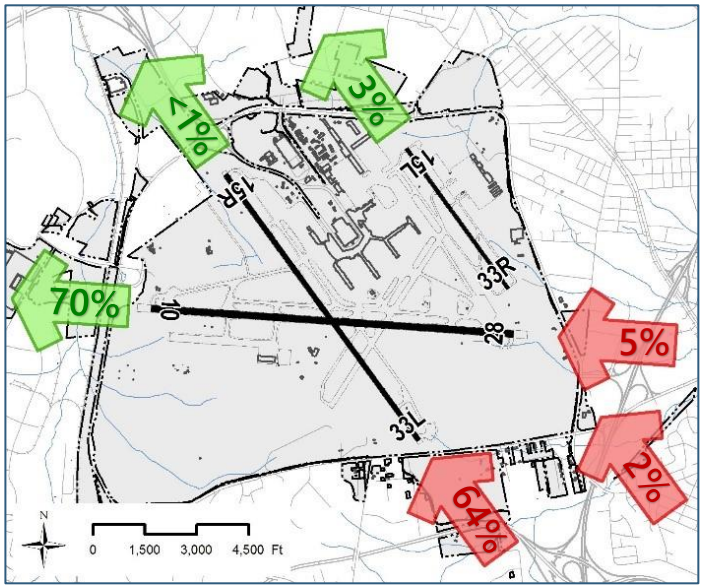
Runway Use

The MDOT MAA maintains a preferential runway use program to minimize the aircraft noise impact on neighboring communities. For noise abatement purposes, west flow (aircraft departures to the west) is preferred. Prevailing wind speed, direction and weather factors determine the direction of air traffic flow. Aircraft usually take off and land into the wind to meet safety and operational requirements. The figures to the right show jet runway use for the 1st Quarter of 2020.

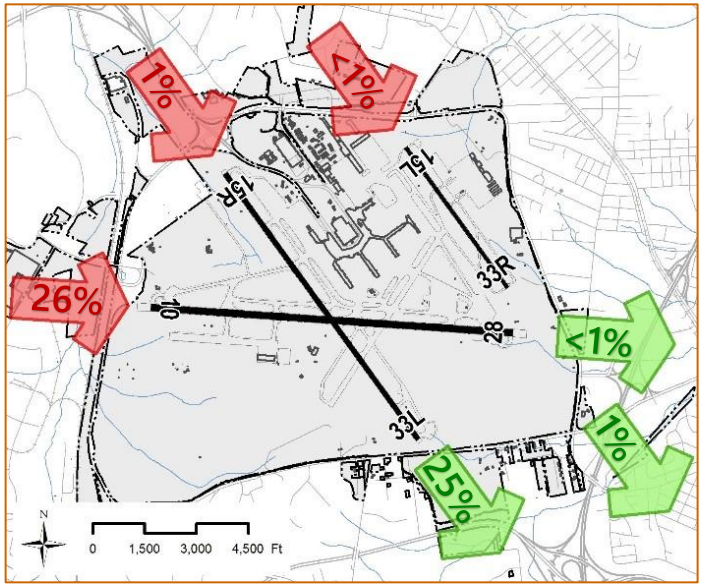
During west flow, all jet aircraft primarily depart (green arrows) from Runway 28 and arrive (red arrows) on Runway 33L, as shown in the top figure to the right. Historical trends result in annual average west flow of about 70%.

During east flow, all jet aircraft primarily depart (green arrows) from Runway 15R and arrive (red arrows) on Runway 10, as shown in the bottom figure to the right. Historical trends result in annual average east flow of about 30%.

West Flow
Runway Use
73% in First Quarter 2020
(Historical Annual Average of 70%)



East Flow
Runway Use
27% in First Quarter 2020
(Historical Annual Average of 30%)

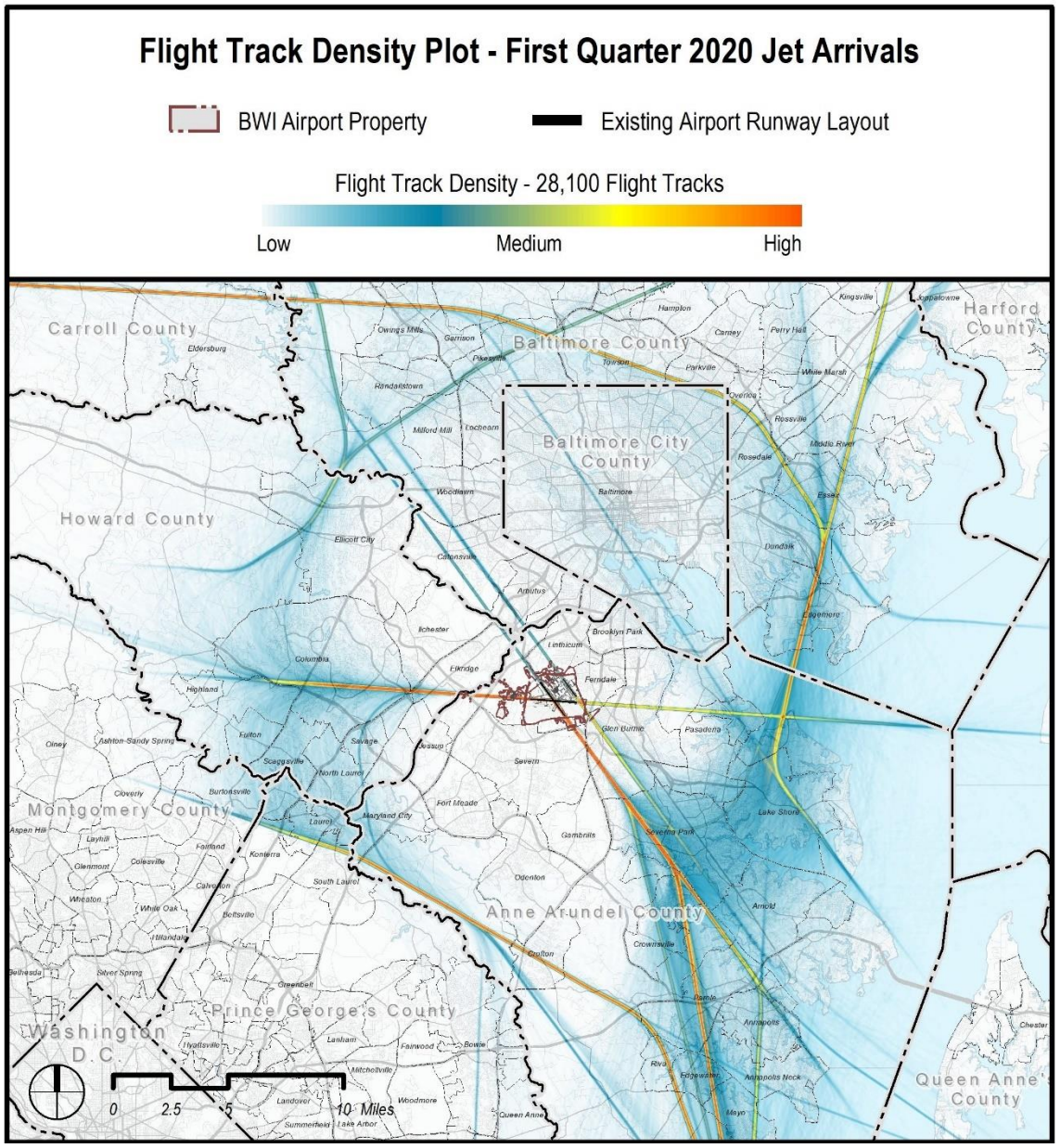


Flight Corridors – Jet Arrivals

The following figures depict the flight corridors at BWI Marshall Airport for jet arrivals and jet departures as derived from BWI Marshall Airport's Noise and Operations Monitoring System (NOMS).

The figure to the right shows jet arrivals during the 1st Quarter of 2020.

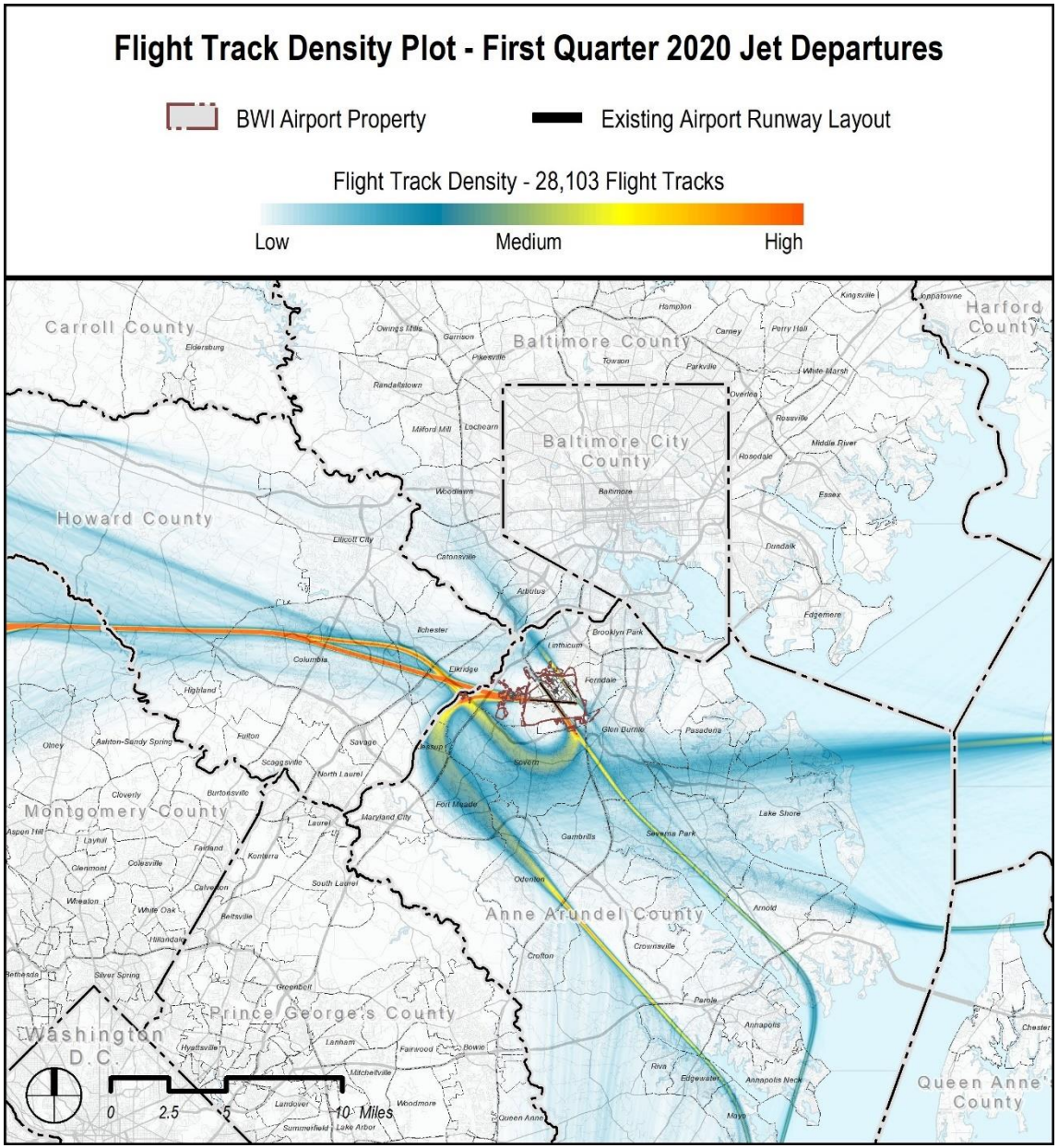
This flight track density plot uses color gradations to depict the flight track geometry, dispersion, and relative frequency of overflights. The color ranges are assigned based on the relative density of aircraft operations. Orange shows the highest density of flights, fading to yellow and then blue as the density decreases.



Flight Corridors – Jet Departures

The figure to the right shows jet departures during the 1st Quarter of 2020.

This flight track density plot uses color gradations to depict the flight track geometry, dispersion, and relative frequency of overflights. The color ranges are assigned based on the relative density of aircraft operations. Orange shows the highest density of flights, fading to yellow and then blue as the density decreases.



Observance of Noise Abatement Procedures

Adherence to approved noise abatement measures is voluntary and subject to change based on weather, efficiency, and safety.

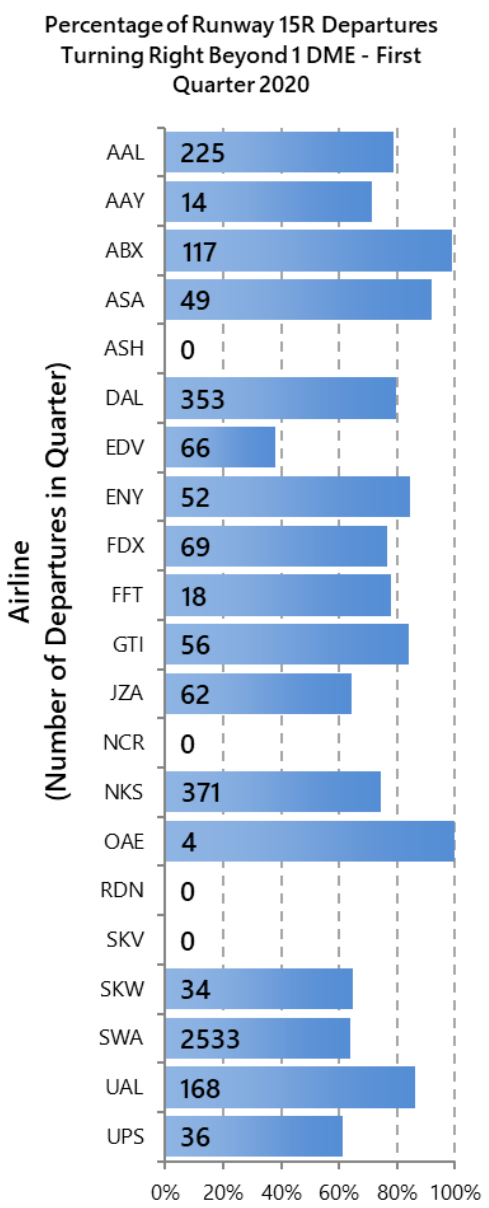
The graphs to the right show how the major carriers and cargo operators perform on the two noise abatement procedures of most interest to the local communities. These procedures are:

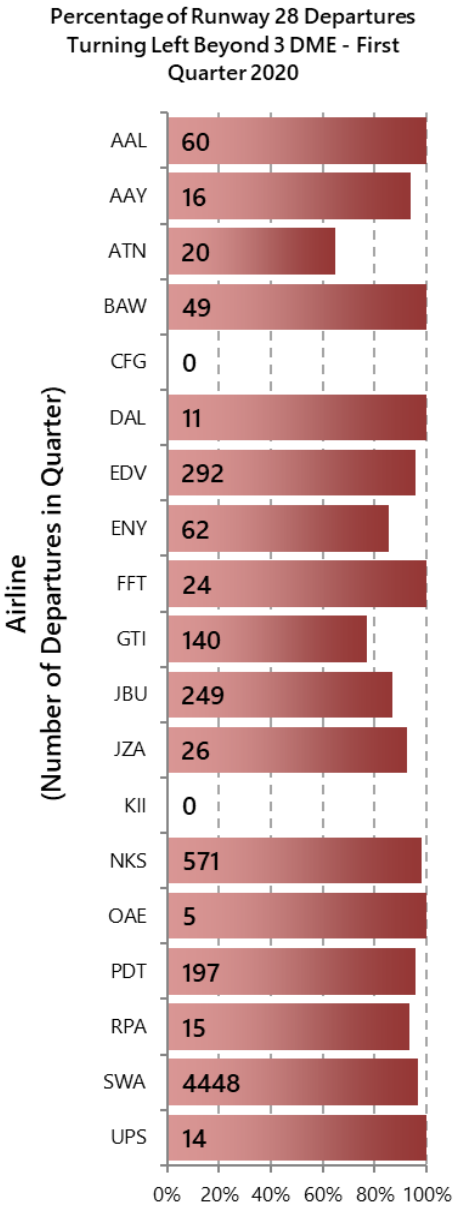
1. Runway 15R departures initiating their right turns at, but not prior to, 1 DME
2. Runway 28 departures initiating their turns at, but not prior to, 3 DME

The graphs show the percentage of flights for each airline which comply with each of the two procedures. Each bar also provides the number of operations by each airline subject to the noise abatement procedure. DME stands for Distance Measuring Equipment, and is the measured slantrange from the aircraft to the navigational aid located near the center of the Airport. One DME equals one nautical mile.

For the 1st Quarter of 2020, 70% of departures turning right from Runway 15R initated their turns beyond 1 DME.

For the 1st Quarter of 2020, 96% of departures turning left from Runway 28 initated their turns beyond 3 DME.

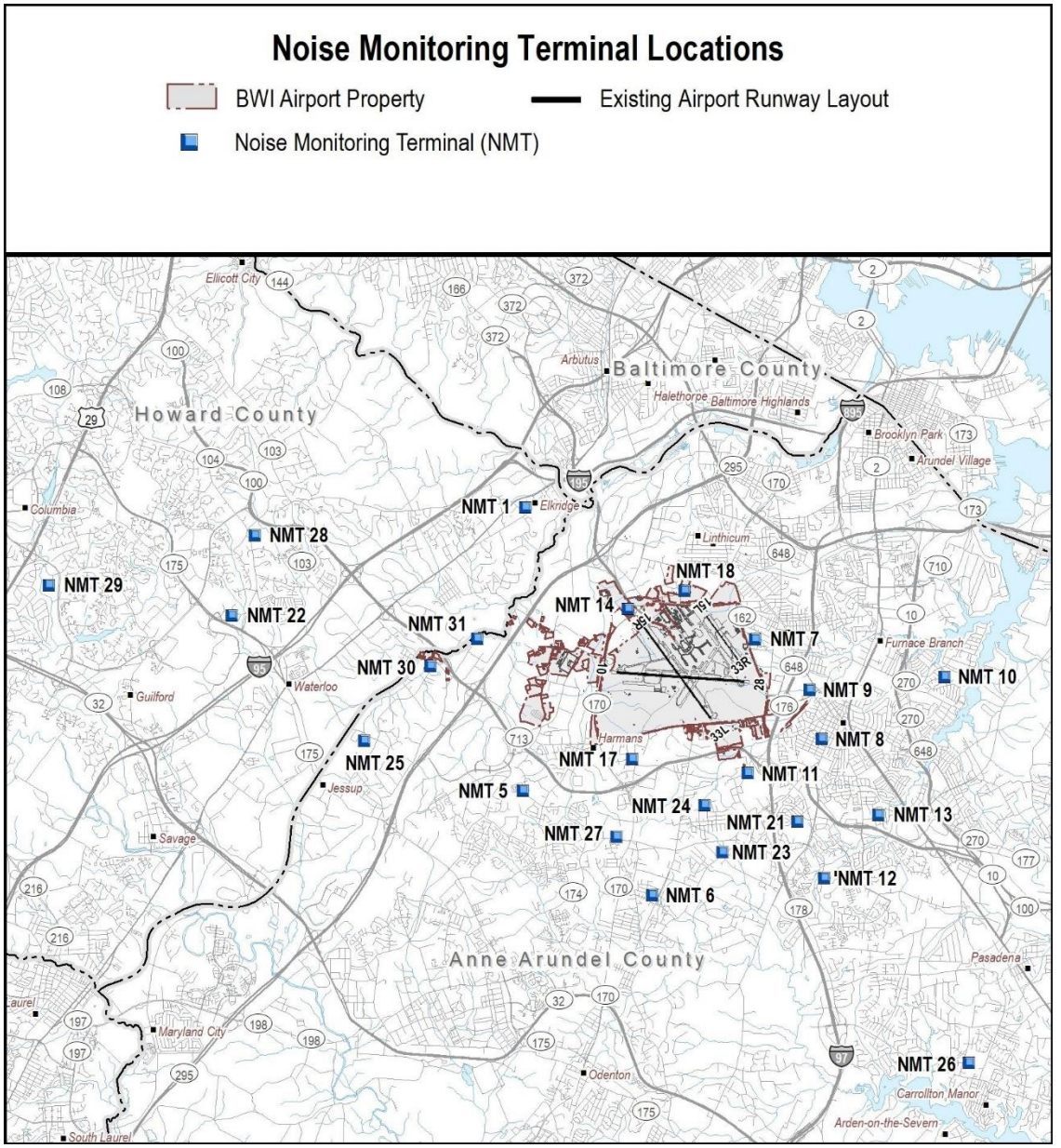




Noise Monitoring Program

MDOT MAA has transitioned to a new Noise and Operations Monitoring System, which replaces BWI Marshall Airport's legacy remote monitoring terminals. The NOMS include 24 NMTs. The figure to the right presents the locations of the active permanent noise monitors for the 1st Quarter of 2020 from the NOMS. Blue squares represent NMTs.

The term DNL (symbolized as "Ldn" in mathematical equations) means Day-Night Average Sound Level, and is used to report aircraft, community and total noise levels. DNL is defined as the cumulative sound energy averaged over a twenty-four hour period, with ten-decibels (dB) added to noise events which occur between the hours of 10 p.m. and 7 a.m. This penalty accounts for the greater impact of noise events which occur at night. DNL is measured from midnight to midnight. The table on the following page provides the quarterly Aircraft, Community, and Total DNL values at each site. At some sites, community or environmental noise levels (street traffic and other neighborhood noises) exceed aircraft noise levels.



First Quarter 2020 Aircraft, Community and Total DNL				
NMT#	Location	Aircraft DNL (dBA)	Community DNL (dBA)	Total DNL (dBA)
1	St. Augustine Church, Elkridge	43.0	57.2	57.3
5	Hebron-Harman Elementary, Hanover	51.1	56.9	57.9
6	Delmont United Methodist, Severn	51.2	54.4	56.1
7	Wicklow Woods, Ferndale	55.0	59.3	60.6
8	Richard H. Lee Elementary School, Glen Burnie	51.2	63.4	63.0
9	Maryland National Guard Armory, Glen Burnie	57.7	63.5	63.8
10	Margate Pumping Station, Glen Burnie	49.7	59.1	58.8
11	Jones Rd., Queenstown	68.5	62.9	69.5
12	Rippling Woods Elementary, Glen Burnie	61.8	58.2	63.4
13	Woodside Elementary, Glen Burnie	48.3	57.3	57.7
14	Runway 15R Approach	58.5	65.3	66.0
17	Timber Ridge Rd., Hanover	44.5	58.0	58.1
18	Runway 15L Approach	55.9	59.6	61.1
21	Glen Burnie Park Elementary, Glen Burnie	60.8	60.2	63.6
22	Lark Brown Road, Columbia	54.8	57.7	59.4
23	Quarterfield Elementary, Severn	56.2	57.8	59.6
24	Poplar Grove HOA, Elmhurst, Severn	56.6	56.4	59.1
25	Belclare Court, Jessup	52.5	57.7	58.8
26	Benfield Elementary, Severna Park	56.7	55.5	59.3
27	Severn Elementary School	54.5	61.0	61.1
28	Maryland School for the Deaf, Ellicott City	54.6	58.6	59.9
29	MDOT Motor Vehicle Administration, Columbia	49.0	57.6	58.0
30	Forest Ave, Hanover	62.9	63.8	66.1
31	Race Road, Hanover	63.1	59.0	64.5

Note: NMTs 2, 3, 4, 15, 16, 19, and 20 have been permanently decommissioned at various points in time.

Residential Portable Noise Monitoring

The portable noise monitoring program is conducted by the MDOT MAA's Office of Environmental Services - Noise Section.

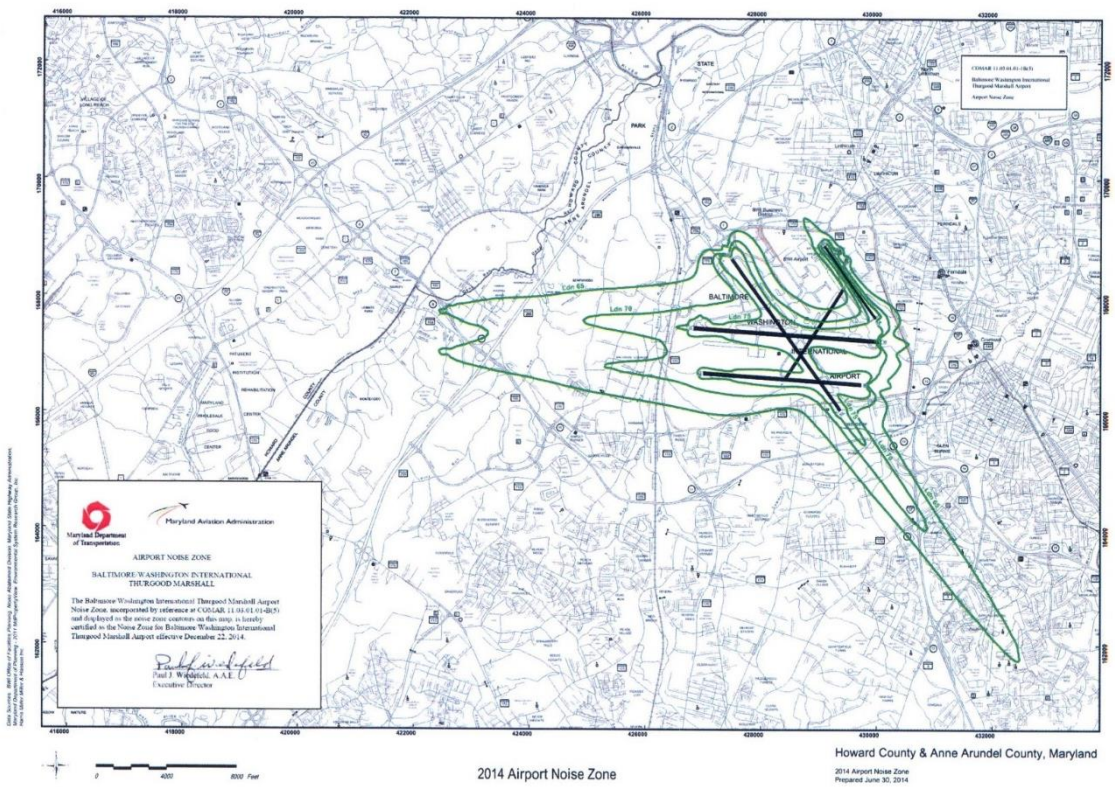
The residential portable monitoring program measures noise levels in selected areas on a temporary basis (typically for a two-week period) upon request of a homeowner. The final report provides aircraft noise levels for each day, the percentage of east/west operations, and general information about noise measurements and airport operations.

Portable Noise Monitoring Reports and Online Applications for residential portable noise monitoring can be found here: https://www.maacommunityrelations.com/content/anznoiseupdate/noisemonitoring.php

Airport Noise Zone

The Maryland Environmental Noise Act of 1974 provides for the protection of citizens from the impact of transportation-related noise. The aviation portion of the Act requires the MDOT MAA to create a certified Airport Noise Zone (ANZ) to control incompatible land development around BWI Marshall Airport and a Noise Abatement Plan (NAP) to minimize the impact of aircraft noise on people living near the Airport. An ANZ and NAP were first established for BWI Marshall Airport in 1976. Both were updated in 1982, 1988, 1993, 1998, and 2007. The latest update to the ANZ became effective on December 22, 2014.

The ANZ is determined by a composite of three noise contours: a base year contour, a five-year forecast, and a ten-year forecast. The largest of the three contours in any area around the Airport determines the outline of the ANZ, thereby offering protection within the largest of the existing or future noise contours. The contours depict the Day-Night Average Sound Level (DNL) around BWI Marshall Airport. Both the State of Maryland and the FAA require the use of the DNL metric by all airports conducting environmental studies. The current 2014 ANZ is depicted to the right.



2014 Airport Noise Zone

MDOT MAA is currently updating the Martin State and BWI Marshall Airport Noise Zones. It is anticipated that a public meeting will be held in the 4th quarter of 2020 and the updated ANZ will be certified in 2020. Subscribe to eNews Express for more information about upcoming workshops.

Further information on the ANZ can be found here:

http://www.maacommunityrelations.com/content/anznoiseupdate/bwianz.php

Outreach and Community Involvement

The MDOT MAA engages in on-going efforts to enhance the level of communication and interaction between the Airport and area residents.

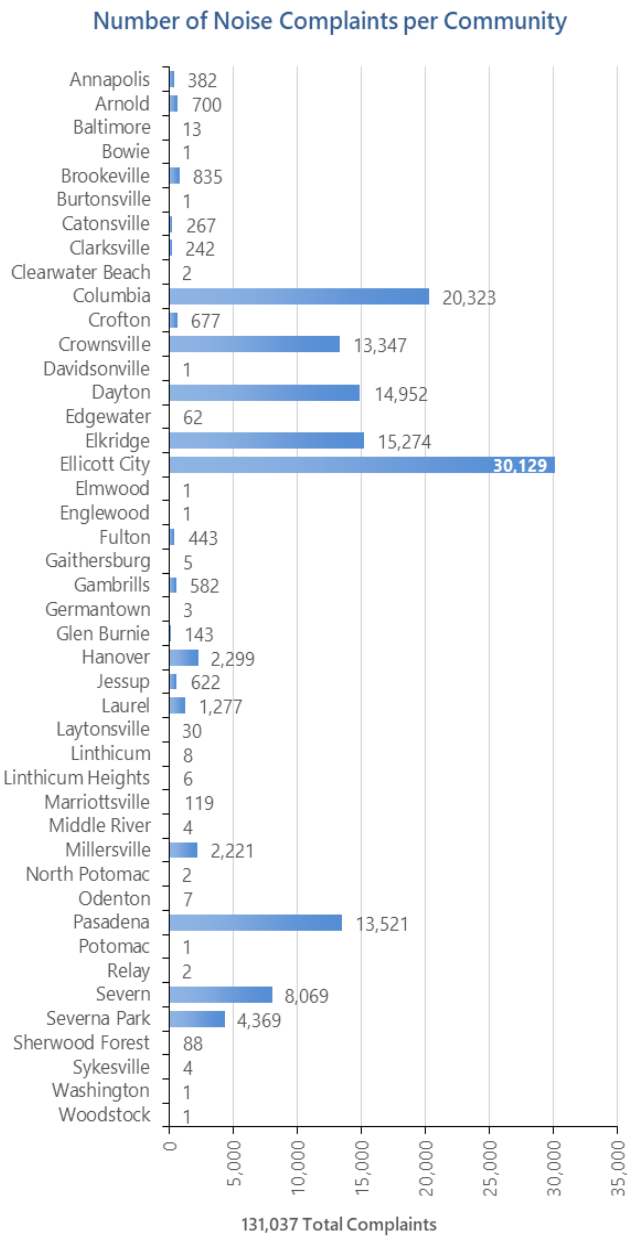
Airport Noise Complaints

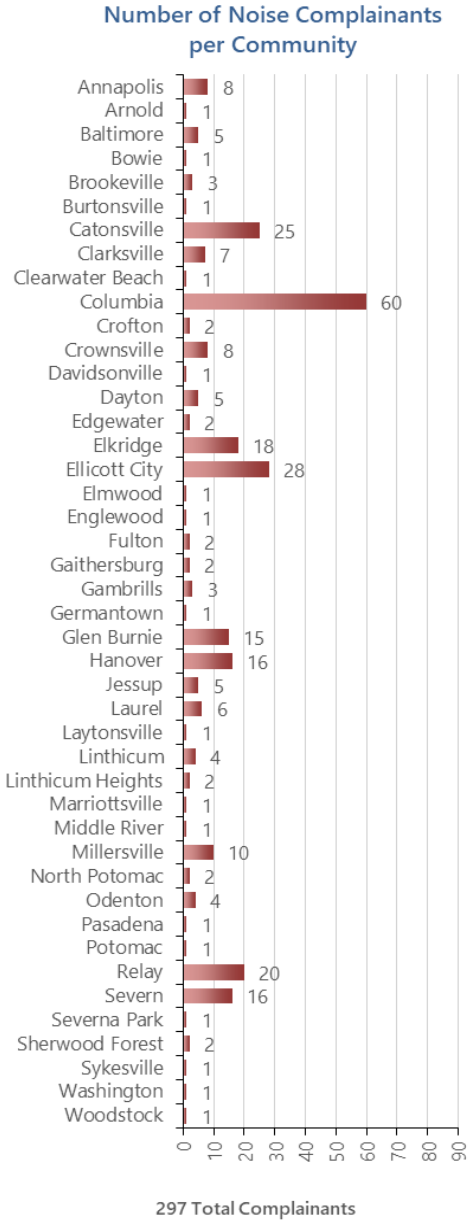
The MDOT MAA maintains a 24-hour Airport Noise Hotline at 410-859-7021. Noise complaints can also be entered online at:

http://www.maacommunityrelations.com/content/anznoiseupdate/noiseform.php

The graphs show the number of complaints and complainants per community for the quarter.

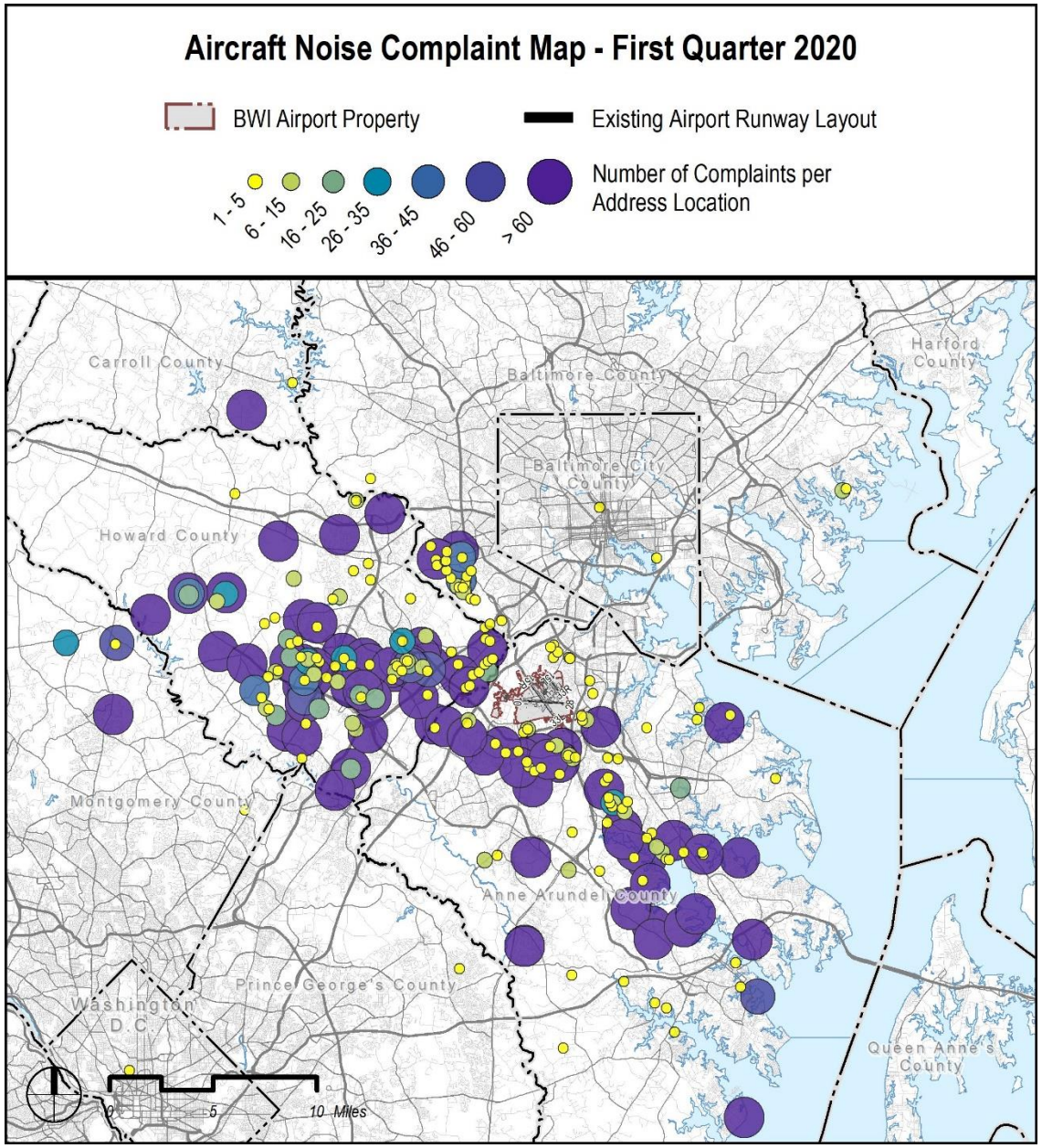
There were 131,037 complaints (297 complainants) during the 1st Quarter of 2020.





OUTREACH AND COMMUNITY INVOLVEMENT

The map to the right shows the locations and number of complaints for the 1st Quarter of 2020. The size and color of each caller location denotes the number of times a complaint was submitted during the quarter. Small yellow circles depict locations with fewer complaints while large darker circles depict greater numbers of complaints.



Community Enhancement Grant Program

The Annotated Code of Maryland, Transportation §5-414 provides for an 11-member "Citizens Committee for the Enhancement of Communities Surrounding Baltimore/Washington International Thurgood Marshall Airport."

The intent of this legislation is to provide some benefit to those citizens living in communities impacted by the daily operation of BWI Marshall by allowing them the opportunity to apply for grants for transportation-related projects such as sidewalks, speed humps, street lights, etc. These communities must be located within the 1998 certified Airport Noise Zone or within two miles of the outermost noise contour.

For more information about the application process, or to get more involved, please see: https://maacommunityrelations.com/content/communityprograms/transportgrants.php

The Community Enhancement Grant Committee met on February 26, 2020 and recommended the approval of grant applications 20-19 and 20-20 in the total amount of $31,228.00.

Example of Eligible Project

Example of Completed Project

Outreach and Community Involvement

The MDOT MAA engages in on-going efforts to enhance the level of communication and interaction between the Airport and area residents.

The MDOT MAA Community Outreach Programs encourage the exchange of information between the MDOT MAA and local community groups and residents.

Specific services or activities provided by the MDOT MAA are listed in the table to the right along with the number of events or recorded reports.

DC Metroplex BWI Community Roundtable

The DC Metroplex BWI Community Roundtable is an MDOT MAA initiative formed at the request of the Federal Aviation Administration (FAA).

More information about the Roundtable, including meeting agendas, past meeting minutes, and presentation materials, is available at www.maacommunityrelations.com.

Public Education & Activities – 1st Quarter of 2020	
Committee Meetings	**1**
Community Meetings	**3**
Community Noise Monitoring Reports	**1**
Airport Zoning Permits	**93**
eNews Express notifications	**20**

Community Meetings – 1st Quarter of 2020

- MTN Airport Noise Zone Stakeholder Advisory Committee Meeting #2 held on 1/14/20
- BWI Airport Noise Zone Stakeholder Advisory Committee Meeting #1 held on 1/23/20
- Meeting with Harmons Civic Association held on 2/27/2020. MDOT MAA was invited to present at this community association meeting to provide an update and overview of the following:
  - Overview of NextGen and Roundtable Activities
  - Overview of new Permanent Noise Monitoring System and WebTrak
  - Updates to Airport Operations (new carriers, etc.)
  - Construction update

Roundtable Meetings – 1st Quarter of 2020

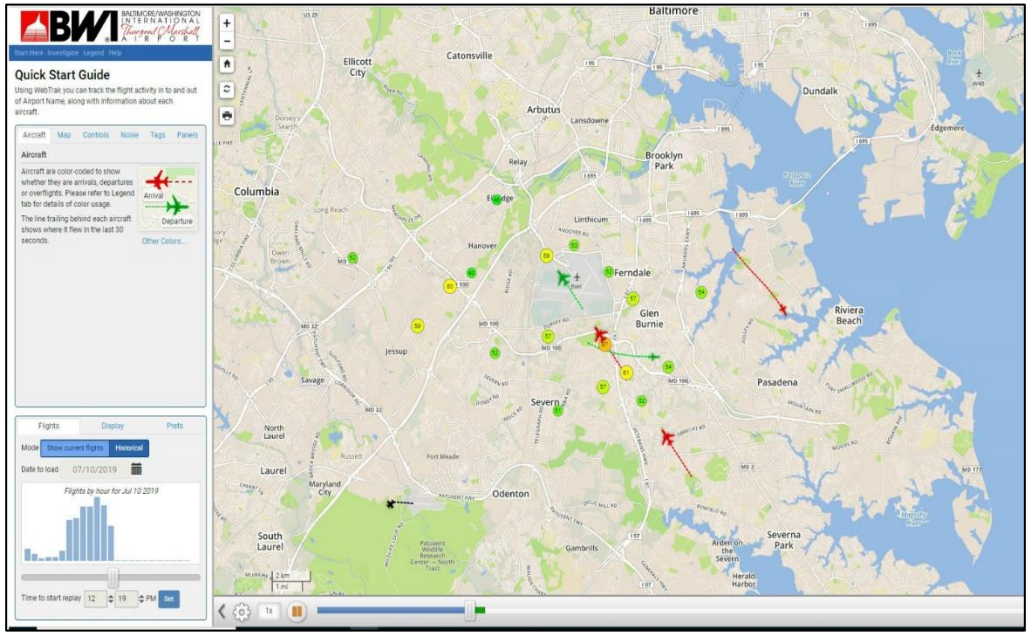
- Roundtable Meeting held 1/21/20
  - Highlight – Annual Report approved on 1/21/20
- Please note the March 17th and April 21st DC Metroplex BWI Community Roundtable meetings have been postponed due to COVID-19 (Coronavirus) transmission concerns. A public notice with a new date for the next meeting will be provided as soon as possible.

WebTrak

The BWI Marshall WebTrak system can be accessed from the airport website—https://www.bwiairport.com/flying-with-us/about-bwi/airport-noise-webtrak or the MAA Community Relations page at https://www.maacommunityrelations.com/content/anznoiseupdate/flight-tracking.php.

The WebTrak system provides historic and near real-time flight tracking information, as well as noise level data for users. The tool displays aircraft flights, weather information, BWI Marshall Airport noise monitor locations, and aircraft noise levels on a user-friendly map. The flight tracking system includes specific details about flights associated with BWI Marshall Airport, as well as information on air traffic transitioning through the region. WebTrak was highlighted at the DC Metroplex BWI Community Roundtable meeting on July 9th, 2020.

WebTrak users can investigate aircraft noise concerns by replaying flight tracks from specific times. The system's location tools enable users to clearly see flights relative to their location. Live data is delayed approximately 30 minutes for system data processing and aviation security requirements. Historic data can be viewed and is available for 90 days. Users may submit aircraft noise complaints to the airport administration directly from the WebTrak system.



Office of Environmental Services - Noise Program
P.O. Box 8766
BWI Airport, MD 21240-0766

Noise Complaints

BWI Noise Hotline: 410-859-7021

Online:

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